

IN THE CLAIMS:

Cancel Claims 7-16 without prejudice and substitute therefor Claims 17-36:

Claims 1-16. Canceled

17.(new) An indicator for plasma sterilization comprising an ink containing at least one type of colorless chromogenic fluoran pigment, a coloring assistant comprising at least one compound having a dithiocarbamyl group, and a binder for base material, wherein said indicator is formed to undergo color tone change by hydrogen peroxide low temperature plasma sterilization.

18.(new) The indicator of Claim 17, wherein said coloring assistant additionally includes at least one compound having a mercapto group.

19.(new) The indicator of Claim 17, wherein said at least one compound having the dithiocarbamyl group exhibits low coloration promoting property in hydrogen peroxide vapor.

20.(new) An indicator for plasma sterilization, comprising at least one type of colorless chromogenic fluoran pigment, a coloring assistant, a binder, and

a discoloration preventing agent for pigment colored by hydrogen peroxide plasma sterilization and comprising a polyphenol compound,

wherein the color tone change of the indicator is allowed to occur by the hydrogen peroxide low temperature plasma sterilization.

21.(new) The indicator of Claim 17, additionally comprising
a discoloration preventing agent for pigment colored by the hydrogen peroxide plasma sterilization and comprising a polyphenol compound.

22.(new) The indicator of Claim 18, additionally comprising
a discoloration preventing agent for pigment colored by the hydrogen peroxide plasma sterilization and comprising a polyphenol compound.

23. (new) The indicator of Claim 19, additionally comprising
a discoloration preventing agent for pigment colored by the hydrogen peroxide plasma sterilization and comprising a polyphenol compound.

24.(new) The indicator of Claim 17, wherein said fluoran pigment is selected from
at least one of

3,6-dimethoxyfluoran;

3-diethylamino-7-chlorofluoran;

3-diethylamino-benzo(a)fluoran;

4-amino-8-diethylamino-benzo(a)fluoran;
4-benzylamino-8-diethylamino-benzo(a)fluoran;
2-amino-8-diethylamino-benzo(a)fluoran;
2-mesidino-8-diethylamino-benzo(c)fluoran;
3-(N,N-diethylamino)-7-(N,N-dibenzylamino)fluoran;
3-diethylamino-7-alkyl(C8)aminofluoran;
2-(N-methyl-N-phenylamino)-6-(N-p-tolyl-N-ethylamino)fluoran;
3-pyrrolidono-7-(N,N-dibenzylamino)fluoran;
3-pyrrolidino-7-cyclohexylaminofluoran;
3-diethylamino-7-cyclohexylaminofluoran;
3-diethylamino-7-cyclohexyl-N-benzylaminofluoran;
2-anilino-3-methyl-6-diethylaminofluoran;
2-anilino-3-methyl-6-(N-ethyl-p-toluidino)fluoran;
2-p-toluidino-3-methyl-6-(N-ethyl-p-toluidino)fluoran;
3-(N-cyclohexyl-N-methylamino-6-methyl-7-anilinofluoran;
3-dibutylamino-7-(o-chloroanilino)fluoran;
3-dibutylamino-7-fluoroanilinofluoran; and
3-diethylamino-6-chloro-anilinofluoran.

25.(new) The indicator of Claim 24, wherein said coloring assistant is selected from
at least one of

tetramethylthiuram monosulfide;

tetramethylthiuram disulfide;
tetraethylthiuram disulfide;
tetra-n-butylthiuram disulfide;
N,N'-dimethyl-N,N'-diphenylthiuram disulfide;
dipentamethylenethiuram monosulfide;
dipentamethylenethiuram disulfide;
dipentamethylenethiuram tetrasulfide;
p-xylylene bis(N,N-diethyldithiocarbamate);
2-benzothiazolyl diethyldithiocarbamate; and
4-dimethylaminobenzylidene rhodamine.

26.(new) The indicator of Claim 17, wherein said coloring assistant is selected from
at least one of

tetramethylthiuram monosulfide;
tetramethylthiuram disulfide;
tetraethylthiuram disulfide;
tetra-n-butylthiuram disulfide;
N,N'-dimethyl-N,N'-diphenylthiuram disulfide;
dipentamethylenethiuram monosulfide;
dipentamethylenethiuram disulfide;
dipentamethylenethiuram tetrasulfide;
p-xylylene bis(N,N-diethyldithiocarbamate);

2-benzothiazolyl diethyldithiocarbamate; and
4-dimethylaminobenzylidene rhodamine.

27.(new) The indicator of Claim 18, wherein said mercapto-containing compound is selected from at least one of

2-mercaptobenzothiazole;
2-mercaptobenzoimidazole;
2-mercaptobenzoxazole;
3-mercapto-1,2,4-triazole;
3-mercapto-4-methyl-4H-1,2,4-triazole;
2-mercaptothiazoline;
5-methyl-1,3,4-thiadiazole-2-thiol;
1-phenyl-5-mercapto-1H-tetrazole;
2-amino-5-mercapto-1,3,4-thiadiazole;
2,5-dimercapto-1,3,4-thiadiazole;
5-mercapto-1-methyltetrazole; and
mercaptosuccinic acid.

28.(new) The indicator of Claim 27, wherein said dithiocarbamyl-containing compound is selected from at least one of

tetramethylthiuram monosulfide;
tetramethylthiuram disulfide;

tetraethylthiuram disulfide;
tetra-n-butylthiuram disulfide;
N,N'-dimethyl-N,N'-diphenylthiuram disulfide;
dipentamethylenethiuram monosulfide;
dipentamethylenethiuram disulfide;
dipentamethylenethiuram tetrasulfide;
p-xylylene bis(N,N-diethyldithiocarbamate);
2-benzothiazolyl diethyldithiocarbamate; and
4-dimethylaminobenzylidene rhodamine.

29. (new) The indicator of Claim 28, wherein said binder is selected from at least one of

cellulose acetate;
cellulose butyrate;
cellulose nitrate;
ethyl cellulose;
hydroxypropyl cellulose;
poly(vinyl acetate);
vinyl acetate/vinyl pyrrolidone copolymer;
poly(vinyl butyral); and
a styrene/acrylonitrile copolymer.

30.(new) The indicator of Claim 17, wherein said binder is selected from at least one of

cellulose acetate;
cellulose butyrate;
cellulose nitrate;
ethyl cellulose;
hydroxypropyl cellulose;
poly(vinyl acetate);
vinyl acetate/vinyl pyrrolidone copolymer;
poly(vinyl butyral); and
a styrene/acrylonitrile copolymer.

31.(new) The indicator of Claim 24, wherein said binder is selected from at least one of

cellulose acetate;
cellulose butyrate;
cellulose nitrate;
ethyl cellulose;
hydroxypropyl cellulose;
poly(vinyl acetate);
vinyl acetate/vinyl pyrrolidone copolymer;

poly(vinyl butyral); and
a styrene/acrylonitrile copolymer.

32.(new)The indicator of Claim 25, wherein said binder is selected from at least one
of

cellulose acetate;
cellulose butyrate;
cellulose nitrate;
ethyl cellulose;
hydroxypropyl cellulose;
poly(vinyl acetate);
vinyl acetate/vinyl pyrrolidone copolymer;
poly(vinyl butyral); and
a styrene/acrylonitrile copolymer.

33.(new)The indicator of Claim 26, wherein said binder is selected from at least one
of

cellulose acetate;
cellulose butyrate;
cellulose nitrate;
ethyl cellulose;

hydroxypropyl cellulose;
poly(vinyl acetate);
vinyl acetate/vinyl pyrrolidone copolymer;
poly(vinyl butyral); and
a styrene/acrylonitrile copolymer.

34.(new) The indicator of Claim 20, wherein said polyphenol compound is selected from at least one of

diphenol acid;
phenolphthalein;
bis(4-hydroxyphenyl)propane;
1,1-bis(4-hydroxyphenyl)cyclohexane;
bis(4-hydroxyphenyl)sulfone;
bis(4-hydroxyphenyl)sulfide;
9,9-bis(4-hydroxyphenyl)fluorene;
4,4'-(1- α -methylbenzylidene)bisphenol;
 α , α' -bis(4-hydroxyphenyl)-1,4-diisopropylbenzene;
4,4'-bisbutylidenebis(3-methyl-6-tertbutylphenol);
 α , α , α' -tris(4-hydroxyphenyl)-1-ethyl-4-isopropylbenzene;
oligomers of 4-phenylphenol and formaldehyde; and
polyvinylphenol(poly(p-hydroxystyrene)).

35.(new) The indicator of Claim 17, comprising

0.1 to 1 part of said pigment,

0.5 to 6 parts of said coloring assistant

10 to 30 parts of said binder, and

70 to 85 parts of a solvent.

36.(new) The indicator of Claim 17 wherein polyethylene synthetic paper is used as the base material.